

CLAIM LISTING

This listing of claims will replace all prior versions and listings of claims in the application:

IN THE CLAIMS

Please cancel claim 5 without prejudice.

1. (Currently Amended) A method for allocating resources of one or more programmable logic devices (PLDs) to a plurality of functions in a system having one or more PLDs on which the functions are implemented, comprising:

monitoring respective activity levels of the functions;
detecting when the activity level of a first function is decreasing;
selecting a subset of PLD resources that implement the first function;
selecting a configuration bitstream for implementing a second function; [[and]]
reconfiguring the subset of PLD resources implementing the first function with the configuration bitstream of the second function;

wherein the subset of PLD resources implementing the first function is reconfigured with the configuration bitstream of the second function only if the activity level of the second function is increasing; and

if none of the functions have increasing activity levels, then reconfiguring the subset of PLD resources with a predetermined configuration bitstream and adding the subset of PLD resources to a reserve of PLD resources.

2. (Original) The method of claim 1, further comprising periodically sampling the activity levels of the functions.

3. (Previously Presented) The method of claim 2, further comprising determining whether the activity level of the first function is decreasing after the step of sampling the activity levels of the functions a selected number of times.

4. (Previously Presented) The method of claim 1, further comprising:
detecting when the activity levels of the second and a third function are increasing;
allocating the subset of PLD resources between the second and third functions in proportion to a ratio of increasing activity levels between the second and third functions;
selecting a configuration bitstream for implementing the third function, wherein the configuration bitstreams for implementing the second and third functions proportionally allocate the subset of PLD resources in proportion to the ratio of increasing activity levels; and
reconfiguring the subset of PLD resources with the configuration bitstreams of the second and third function.
5. (Cancelled)
6. (Currently Amended) The method of claim 1 [[5]], further comprising, if none of the functions have decreasing activity levels, then detecting whether any of the functions have increasing activity levels, and for functions having increasing activity levels, allocating a subset of PLD resources from the reserve of PLD resources to the functions having increasing activity levels and reconfiguring the subset of PLD resources from the reserve of PLD resources with configuration bitstreams that implement the functions having increasing activity levels.
7. (Original) The method of claim 6, wherein the configuration bitstreams for implementing the functions having increasing activity levels proportionally allocate the subset of PLD resources from the reserve in proportion to a ratio of increasing activity levels.
- 8-13. (Cancelled)

14. (Currently Amended) An apparatus for allocating resources of one or more programmable logic devices (PLDs) to a plurality of functions in a system having one or more PLDs on which the functions are implemented, comprising:

- means for monitoring respective activity levels of the functions;
- means for detecting when the activity level of a first function is decreasing;
- means for selecting a subset of PLD resources that implement the first function;
- means for selecting a configuration bitstream for implementing a second

function; and

means for reconfiguring the subset of PLD resources implementing the first function with the configuration bitstream of the second function only if the activity level of the second function is increasing; and

means for reconfiguring the subset of PLD resources with a predetermined configuration bitstream and adding the subset of PLD resources to a reserve of PLD resources if none of the functions have increasing activity levels.

15. (Currently Amended) A method for allocating resources of one or more programmable logic devices (PLDs) to a plurality of functions in a system having one or more PLDs on which the functions are implemented, comprising:

monitoring activity levels of the functions; [[and]]

selectively reconfiguring selected resources of the PLDs in response to activity levels of the functions; and

in response to none of the functions having increasing activity levels and at least one of the functions having a decreasing activity level, selecting a subset of PLD resources that implement the at least one function and reserving the subset of resources for allocation to another function when an activity level of the other function is increasing.

16. (Previously Presented) The method of claim 15, further comprising periodically sampling the activity levels of the functions.

17. (Previously Presented) The method of claim 16, further comprising determining whether the activity level of a function is decreasing after the step of sampling the activity levels of the functions a selected number of times.

18. (Previously Presented) The method of claim 15, further comprising:

allocating a subset of PLD resources between functions in proportion to a ratio of increasing activity levels between the functions;

selecting one or more configuration bitstreams that proportionally allocate the subset of PLD resources in proportion to the ratio of increasing activity levels; and

reconfiguring the subset of PLD resources with the one or more configuration bitstreams.

19. (Currently Amended) A method for allocating resources of at least one programmable logic devices(PLD), comprising:

monitoring respective activity levels of a plurality of functions implemented on at least one PLD;

detecting when the activity level of a first function of the plurality is decreasing and the activity level of a second function of the plurality is increasing;

selecting, in response to the decreasing activity level of the first function and the increasing activity level of the second function, a subset of PLD resources that implement the first function and a configuration bitstream for implementing a second function; [[and]]

reconfiguring the subset of PLD resources implementing the first function with the configuration bitstream of the second function in response to an increasing activity level of the second function; and

in response to none of the plurality of functions having increasing activity levels and at least one of the functions having a decreasing activity level, reconfiguring the subset of PLD resources that implement the first function with a configuration bitstream that implements a function other than a function in the monitored plurality of functions, and maintaining the subset of PLD resources as a reserve of PLD resources available for subsequent configuration to implement a function of the plurality having an increasing activity level.